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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A ~~method~~ machine comprising:

a computing device for determining ~~a computer-implemented method for use in determination of~~ implied volatility in options pricing, ~~said method comprising the~~ wherein said device determines the implied volatility by division of the period until option expiration into subperiods and possible underlying asset price values, and by calculation of a node vega, said node vega being the exact derivative of the option price with respect to the volatility ~~in~~ at the end of at least one of said subperiods and at one or more of said underlying asset price values.

2. (Currently Amended) A ~~method~~ machine as claimed in claim 1, wherein said node vega is calculated at the end of a plurality of said subperiods.

3. (Currently Amended) A ~~method~~ machine as claimed in claim 1, wherein said ~~method~~ machine ~~is used for calculation of~~ calculates implied volatility for American options.

4. (Currently Amended) A ~~method~~ machine as claimed in claim 1, wherein said ~~method~~ calculation is conducted using a Cox-Ross-Rubinstein (CRR) binomial tree.

5. (Currently Amended) A ~~method~~ machine comprising:

a computing device for determining ~~a computer-implemented method for use in determination of~~ implied volatility in options pricing, ~~said method comprising the~~ wherein said device determines the implied volatility by division of the period until option expiration into sub-periods, and calculation of a node vega, said node vega being the exact derivative of the option price with respect to the volatility in at least one of said subperiods, said node vega being calculated using ~~Equation (5)~~ the following equation:

$$V_i = \left(\frac{1}{R}\right) \times \left[p\, V_{i+1}^{UP} + (1-p)\, V_{i+1}^{DOWN} + \left(C_{i+1}^{UP} - C_{i+1}^{DOWN}\right)\frac{\partial p}{\partial \sigma} \right]$$

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6. (Currently Amended) A ~~method~~ machine as claimed in claim 5, wherein said node vega is calculated at the end of a plurality of said subperiods.

7. (Currently Amended) A ~~method~~ machine as claimed in claim 5, wherein said ~~method~~ machine ~~is used for calculation of~~ calculates implied volatility for American options.

8. (Currently Amended) A ~~method~~ machine as claimed in claim 5, wherein said ~~method~~ calculation is conducted using a Cox-Ross-Rubinstein (CRR) binomial tree.